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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHEN, YAN LU

ART UNIT	PAPER NUMBER
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2146

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/538,097</p>	<p>Applicant(s)</p> <p align="center">PRONK ET AL.</p>	
	<p>Examiner</p> <p align="center">Yan Chen</p>	<p>Art Unit</p> <p align="center">2146</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/20/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The "signal" as claim is not limited to that which falls within a statutory category of invention because it is not limited to a process, machine, manufacture, or a composition of matter. Instead, it includes a form of energy. Energy does not fall within a statutory category since it is clearly not a series of steps or acts to constitute a process, not a mechanical device or combination of mechanical devices to constitute a machine, not a tangible physical article or object which is some form of matter to be a product and constitute a manufacture, and not a composition of two or more substances to constitute a composition of matter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by 5917822 (hereinafter Lyles et al.).

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Regarding claim 1, Lyles et al. teach:

A shared medium communication system comprising:

a primary station arranged to receive an access request, process the access request and send a grant in response to the access request (figure 3 and 4, element 305, bandwidth allocation unit; abstract: "executed by or in a head-end controller, allocates bandwidth transmission slots, converting requests for bandwidth into virtual scheduling times for granting access to the shared media", column 10, line 1, "These grants are transmitted as messages in the downstream channel to the appropriate station(s)");

a secondary station for sending the access request and for receiving the grant (figure 3 and 4, element 315, network access unit; column 3, lines 57-61, "Network Access Unit (NAU). The collection of those bandwidth access functions necessary to (1) (possibly) aggregate traffic; (2) make requests of the bandwidth allocation unit 305; and (3) receive authorizations and transmit based on those authorizations"); and

a shared medium coupling the primary station with the secondary station (figure 3, element 310, network; column 4, lines 41-44, "Shared Media. Any media such that (1) the bandwidth allocation unit 305 schedules the entirety of the transmissions, and can transmit to any single network access unit 315, or group of network access units 315"), characterized in that the secondary station is arranged to merge several access requests into a multi-request and send the multi-request to the primary station, and in that the primary station is arranged to receive the multi-request, process the multi-

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request and send the grants in response to the access requests merged in the multi-request (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Regarding claim 4, Lyles et al. teach:

A secondary station for sending an access request to a primary station and for receiving a grant from the primary station in response to the access request (figure 3 and 4, element 315, network access unit; column 3, lines 57-61, "Network Access Unit (NAU). The collection of those bandwidth access functions necessary to (1) (possibly) aggregate traffic; (2) make requests of the bandwidth allocation unit 305; and (3) receive authorizations and transmit based on those authorizations"), the access request comprising a request for access to a shared medium, characterized in that the secondary station is arranged to merge several access requests into a multi-request and send the multi-request to the primary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information

elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit”).

Regarding claim 7, Lyles et al. teach:

A primary station for receiving an access request from a secondary station, for processing the access request and for sending a grant to the secondary station in response to the access request (figure 3 and 4, element 305, bandwidth allocation unit; column 6, lines 52-54, “requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit”; abstract: “executed by or in a head-end controller, allocates bandwidth transmission slots, converting requests for bandwidth into virtual scheduling times for granting access to the shared media”, column 10, line 1, “These grants are transmitted as messages in the downstream channel to the appropriate station(s)”), the access request comprising a request for access to a shared medium, characterized in that the primary station is arranged to receive a multi-request containing several merged access requests, process the multi-request and send the grants to the secondary station in response to the access requests in the multi-request (column 7, lines 7-25, “requests from a network access unit 315 consisting of a batch of transmission requests”; “In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests”; “or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access

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unit”; column 6, lines 54-56, “converting the arriving requests into virtual scheduling times for granting access to the shared media”).

Regarding claim 8, Lyles et al. teach:

A method of operating a shared medium communication system, the method comprising:

a primary station receiving an access request, processing the access request and sending a grant in response to the access request (figure 3 and 4, element 305, bandwidth allocation unit; column 6, lines 52-54, “requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit”; abstract: “executed by or in a head-end controller, allocates bandwidth transmission slots, converting requests for bandwidth into virtual scheduling times for granting access to the shared media”, column 10, line 1, “These grants are transmitted as messages in the downstream channel to the appropriate station(s)”),

a secondary station sending the access request to and receiving the grant from the primary station, the access request comprising a request for access to a shared medium (figure 3 and 4, element 315, network access unit; column 3, lines 57-61, “Network Access Unit (NAU). The collection of those bandwidth access functions necessary to (1) (possibly) aggregate traffic; (2) make requests of the bandwidth allocation unit 305; and (3) receive authorizations and transmit based on those authorizations”), characterized in that the method further comprises:

the secondary station merging several access requests into a multi-request and sending the multi-request to the primary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"),

the primary station receiving the multi-request, processing the multi-request and sending the grants in response to the access requests merged in the multi-request (column 6, lines 52-56, "requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit, converting the arriving requests into virtual scheduling times for granting access to the shared media.").

Regarding claim 11, Lyles et al. teach:

A method of sending an access request to a primary station and receiving a grant from the primary station in response to the access request, the access request comprising a request for access to a shared medium (column 6, lines 52-56, "requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit, converting the arriving requests into virtual scheduling times for granting access to the shared media."), characterized in that the method comprises merging several access requests into a multi-request and sending the multi-request to the primary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a

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batch of transmission requests”; “In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests”; “or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit”).

Regarding claim 12, Lyles et al. teach:

A method of receiving an access request from a secondary station, processing the access request and sending a grant to the secondary station in response to the access request, the access request comprising a request for access to a shared medium, characterized in that the method comprises receiving a multi-request comprising several merged access requests (column 7, lines 7-25, “requests from a network access unit 315 consisting of a batch of transmission requests”; “In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests”; “or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit”), processing the multi-request and sending the grants to the secondary station in response to the access requests merged in the multi-request (column 6, lines 52-56, “requests for transmission bandwidth received by a bandwidth allocation unit from a network access unit, converting the arriving requests into virtual scheduling times for granting access to the shared media.”; column 10, line

1, "These grants are transmitted as messages in the downstream channel to the appropriate station(s)").

Regarding claim 13, Lyles et al. teach:

A signal for use in a shared medium communication system, characterized in that the signal comprises a multi-request including at least two merged requests for access to a shared medium (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit").

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-3, 5-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyles et al. as applied to claims 1, 4, and 8 above, and further in view of US 2002/0176361 A1 (hereinafter Wu et al.).

Lyles et al. teach the merging and sending of access request by the secondary station (column 7, lines 7-25, "requests from a network access unit 315 consisting of a batch of transmission requests"; "In addition, a request may contain a single information element which represents an aggregation of individual queued transmission requests"; "or a request may contain multiple information elements, a batch, which represents a burst size worth of requests over one or more transmission queues at the network access unit"). Lyles et al. further teach that the

Lyles et al. does not explicitly disclose the merging and sending of the access request is adapted to depend on history of access request previous merged, previous send or grants previous received.

Wu et al. teach data transmission rate is adapted based on history of previous data rate transmissions (paragraph [0029], "collect a history of feedback message. Essentially, the network characteristics are "learned" or determined without overloading the system"). Wu further provides the advantage of using collected feedback message history for data transmission adaptation to utilize the available bandwidth most efficiently (paragraph [0029], "the data rate is adapted to best utilize the available bandwidth without congestion").

It would have been obvious to one of ordinary skill in the art, having the teachings of Lyles et al. and Wu et al. before them at the time the invention was made to modify the shared medium communication system of Lyles et al. to include method of transmitting access request data base on the information collected on previous data transmission as taught by Wu et al.

One of ordinary skill in the art would have been motivated to make this modification in order to efficiently transmitted data in a shared medium in view of Wu et al.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yan Chen whose telephone number is (571) 270-1926. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yan Chen



JEFFREY PWU
SUPERVISORY PATENT EXAMINER